

**PROGRAM:** Industrial Manufacturing

**PROGRAM  
CIP CODE:** 15.0600

**DESCRIPTION:** The Industrial Manufacturing program is designed to prepare students to apply basic engineering principals and technical skills. Students will be prepared in the following instructional areas: manufacturing systems, materials processing, production planning and control, documentation, technical problem-solving, management information systems, predictive/preventive maintenance and automated manufacturing. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, and applied academic and life management skills. The program is comprised of two core curriculums and three options: Option A (Metals Manufacturing); Option B (Plastic Manufacturing); or Option C (Production Technologies).

**RECOMMENDED PROGRAM SEQUENCE OF COURSES:**

**Career  
Preparation  
Grades  
10-12** The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

**15.0600.10** Fundamentals of Industrial Manufacturing: This course includes units of instruction in examining the use of electrical/electronic, mechanical, hydraulic, pneumatic, chemical, computer control and power systems used in manufacturing. Units also include measurement techniques and instruments, blueprint and technical drawing reading. Additional units include career planning, communications skills, work-based learning experiences, business planning, teamwork, safety, creative thinking and problem solving.

-and-

**15.0600.12** Applications of Industrial Manufacturing: This course includes units for the application and operation of electrical/electronic, mechanical, hydraulic, pneumatic, chemical, automated manufacturing, measurement instruments and power systems used in manufacturing. Additional units provide the integration of basic engineering principles and technical skills in the manufacturing of a product.

-and-

One of the following Career Preparation options will be included as part of the instructional sequence for this program:

**Option A**

**15.0600.20** The Metals Manufacturing program prepares students to apply basic engineering principles and technical skills in support of engineers and metallurgists engaged in developing and using industrial metals and manufacturing process.

**-or-**

**Option B**

**15.0600.30** The Plastics Manufacturing program prepares students to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in developing and using industrial polymers.

**-or-**

**Option C**

**15.0600.40** The Production Technology program prepares students to apply basic engineering principles and technical skills to the identification and resolution of production problems in the manufacture of products.

And program may elect to add:

**15.0600.75** Industrial Manufacturing - Internship: This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Industrial Manufacturing knowledge and skills.

**-or-**

**15.0600.80** Industrial Manufacturing - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Industrial Manufacturing program.

## TEACHER CERTIFICATION REQUIREMENTS FOR THE INDUSTRIAL MANUFACTURING PROGRAM

**CAREER PREPARATION:** The instructor must be vocationally certified according to the following table

Industrial Manufacturing	CERTIFICATES	
	Types: BVT, SVT Approved Areas: ITE, VTT	Types: PVI, SVI, PCTI, SCTI  No Approvals Necessary

**Note:**

- Industrial Manufacturing, 15.0600.70 may be a part of the sequence and the teacher must hold a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator 15.0600.75 is not required to have a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator 15.0600.80 is required to have a Cooperative Education Endorsement (CEN).

## CERTIFICATE ABBREVIATIONS FOR THE INDUSTRIAL MANUFACTURING PROGRAM

Certificate Types		Approved Areas List	
BVT	Basic Vocational Education	ITE	Industrial Technology Education
PCTI	Provisional Career and Technical Education Industrial Technology	VTT	Vocational Trade and Technical Education
PVI	Provisional Vocational Industrial Technology		
SCTI	Standard Career and Technical Education Industrial Technology		
SVI	Standard Vocational Industrial Technology		
SVT	Standard Vocational Education		